CORRESPONDENCE/MEMORANDUM

DATE: January 22, 2004 FILE REF: 3200

TO: Natural Resources Board

FROM: Scott Hassett

SUBJECT: Background on Proposed Revisions to ch. NR 216, Storm Water Discharge Permits

1. Why This Rule Revision is Being Proposed

a. Action or event that triggered the proposal

Promulgation of EPA's Storm Water Phase II rule on Dec. 8, 1999 was the core action that triggered this proposed rule revision. The Phase II requirements build upon Phase I of the federal storm water management rules promulgated in 1990 that created a storm water discharge permit system (National Pollutant Discharge Elimination System) as a means of controlling the amount of pollution generated by certain dischargers. Phase II addresses storm water discharges from small municipal separate storm sewer systems (MS4s) that serve less than 100,000 people and from construction sites that disturb one to five acres. Phase II also allows exclusion of some facilities and inclusion of others based on the likelihood of adverse impacts to water quality. The rule contains six minimum measures for small MS4s that EPA believes should significantly reduce pollutants in urban storm water.

The Clean Water Act states that specific storm water discharges from point sources to navigable waters of the United States are unlawful, unless authorized by a NPDES permit. In 1974 the EPA delegated the authority for issuing permits to the Wisconsin Department of Natural Resources, which exercises its permitting authority through the Wisconsin Pollutant Discharge Elimination System (WPDES), authorized under ch. 283, Wisconsin Statutes. DNR received authority in 2001 Wisconsin Act 16 to revise ch. NR 216, Wis. Adm. Code, to include EPA's Phase II requirements.

b. Issues addressed by the rule

The proposed rule revisions address the issue of polluted urban storm water runoff that comes from such sources as construction sites, lawns, streets and parking lots to storm sewers and is discharged to rivers, streams, lakes and groundwater without treatment. Research on urban streams in Milwaukee County showed high concentrations of suspended solids, bacteria, heavy metals, oil and grease and polycyclic aromatic hydrocarbons (PAHs) in stormwater discharges and stream water that exceeded water quality criteria. [1]

Other constituents of urban storm water include pesticides, nutrients (phosphorus and nitrogen), sediment, chloride, toxins, oxygen-demanding substances (organic material) and viruses which pose threats to the health of fish, wildlife and humans. Furthermore, the highest concentrations of

[1] Masterson, John and Bannerman, R. "Impacts of Stormwater Runoff on Urban Streams in Milwaukee County, Wisconsin." Paper presented at National Symposium on Water Quality: American Water Resources Assn. 1994.

contaminants are often contained in the "first flush" discharges, which occur during the first major storm after an extended dry period.[2]

This polluted storm water can destroy fish and their habitat, degrade drinking water quality, clog harbors and streams with sediment and reduce recreational use of lakes and streams. Phosphorus and nitrogen present in most fertilizers are essential for plant and animal growth, but can cause heavy plant and algae growth (including blue-green algae that may pose serious health threats to some animals) when they are present in excess of plant needs. Excess organic matter from the decomposition of plants and algae significantly depletes oxygen in the water, which limits the fish and invertebrate species that can survive. Sediment covers spawning grounds and negatively affects visibility and the opportunity for fish to find food.

Urban development alters the natural infiltration capability of land through the creation of impervious surfaces such as rooftops, driveways, sidewalks, streets and parking lots. The storm water and snowmelt that run off these impervious areas are higher in velocity, volume, pollutants and temperature than flows in areas that have more natural vegetation and soil to filter and disperse the runoff.[3] Research conducted in Madison, Wisconsin, measured solids, phosphorus and heavy metal loads from streets, parking lots, roofs, driveways and lawns in residential, commercial and industrial areas. Results showed that streets carried large loads for most of the contaminants in all three land uses, parking lots contributed large contaminant loads in commercial and industrial areas and lawns and driveways contribute large phosphorus loads in the residential land use. Roofs produced significant zinc loads in the commercial and industrial land uses.[4]

Storm water running off impervious surfaces can have devastating effects on receiving waters. Research has shown that once the land use draining to a stream has greater than 10% connected imperviousness, the stream begins to deteriorate and few, if any, urban streams can support diverse benthic communities at imperviousness levels of 25 percent or more. An area of medium density single family homes can be anywhere from 25 percent to nearly 60 percent impervious, depending on the design of the streets and parking. Research has also shown that the amount of rain running off a 1-acre parking lot is close to 16 times that produced by an acre of undeveloped meadow. [5] Urban nonpoint sources are not restricted to highly urbanized areas. In a study of 134 sites on 103 Wisconsin streams, researchers found that levels of urbanization as low as 10 to 20 percent were associated with severe impacts on the biotic integrity of the streams. [6]

Construction sites deliver high sediment loads, out of proportion to their land area. In the Lake Mendota Priority Watershed, construction sites contributed 23% of the sediment load while accounting for only 0.3% of the land area on an average annual basis.[7] Sediment loads from

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[2] Schueler, T.R., 1994. "First Flush of Stormwater pollutants Investigated in Texas" Note 28. Watershed Protection Techniques *1(2)*

[3] U.S. EPA. 1997. "Urbanization and Streams: Studies of Hydrologic Impacts." EPA 841-R-97-009. Office of Water. Washington, DC.

[4] Bannerman, R.T., Owens, D.W., Dodds, R.B., and Hornewer, N.J. 1993. "Sources of Pollutants in Wisconsin Stormwater." Wat. Sci. Tech. Vol. 28, No. 3-5, pp. 241-259.

[5] Schueler, T.R. 1994. "The Importance of Imperviousness." Watershed Protection Techniques. 1(3).

[6] Wang, L., Lyons, J., Kanehl, P. and Gatti R. "Influences of Watershed Land Use on Habitat Quality and Biotic Integrity in Wisconsin Streams." Fisheries. vol. 22, no. 6, June, 1997.

[7] Betz, Carolyn. 1997. Nonpoint Source Control Plan for the Lake Mendota Priority Watershed Project.

construction sites have been shown to be 10 times larger than typical loads from rural and urban land uses in Wisconsin.[8]

The cumulative impacts of the sedimentation from construction sites destroy habitat by covering the stream bottom. Pollutants attached to the sediment may bio-accumulate in aquatic species and will ultimately enter the food chain. It may take a long time to reverse the effects of sedimentation, but reducing the additional load will allow the stream to return to a more natural state over time.

Revisions to ch. NR 216 are expected to produce the same positive financial, recreational and health benefits that EPA believes the Phase II regulations will produce. Benefits to the environment include reduced scouring and erosion of streambeds, improved aesthetic quality of waters, reduced eutrophication of aquatic systems, improved conditions for wildlife and endangered and threatened species and increased biodiversity opportunities.

2. Summary of Rule

The Department drafted proposed revisions to ch. NR 216 to conform to federal regulations. Changes include defining which municipalities must apply for storm water permits, lowering the construction permit threshold to one acre of disturbance from five acres and establishing associated permit requirements. The revisions also establish criteria to determine if municipalities that have municipal separate storm sewer systems that connect with those of regulated municipalities should obtain a WPDES permit, modify the municipal permit portion of the code to better reflect municipal permit requirements, create a voluntary option for local governments to administer the state construction permit program and establish a system for industrial facilities to certify that they do not meet criteria that would require them to obtain a storm water permit. These revisions will significantly increase the number of permits issued to municipalities and construction sites. The current storm water permit fee system is revised from a flat fee into a graduated fee structure to collect revenue as appropriate to regulate both small and large municipalities and construction sites.

The rule contains three subchapters, one each for industrial, municipal and construction site permits. The major elements of each subchapter identify permit applicability, fee structure, application process and permit requirements.

Changes to Subchapter I – Municipal Storm Water Discharges

- A proposed new municipal application process shortens the length of time needed to obtain a permit from the previous 3-4 years to 90 days with the use of a general permit.
- Proposed permit requirement changes conform to the federal Storm Water Phase II requirements. Changes are proposed for the following six minimum measures:
  - Public education and outreach
  - Public involvement and participation
  - Illicit discharge detection and elimination
  - Construction site pollutant control
  - Post-construction site storm water management

[8] Owens, David W., Jopke, Peter, Hall, David W., Balousek, Jeremy and Roa, Aicardo. August 2000. U.S. Geological Service and Dane County Land Conservation Dept. "Soil Erosion from Two Small Construction Sites, Dane County, Wisconsin." USGS Fact Sheet FS-109-00.

    - Pollution prevention
- The applicability criteria for permitting MS4s was expanded and will result in an additional 180 permitted MS4s in the next 2 years (250 total).
- Applicable municipalities will receive a general permit rather than individual permits that were previously issued.
- The proposed fee structure will change from a flat fee of $5,000 or $10,000 to an adjusted fee based on the populations of incorporated areas. The proposed fees would range from $50 for populations less than 1,000 to $25,000 for populations greater than 400,000.

Changes to Subchapter II – Industrial Storm Water Discharges
- No permit would be needed for industries that certify to DNR that their facilities have no exposure of storm water to industrial materials or activities that could contaminate it. Certification would need to occur every five years.
- The Tier 3 permit is proposed to be discontinued because the "no exposure" exclusion supplants it.
- Fees are proposed to be increased from $100 to $130 and from $200 to $260 representing a 2.65% annual increase for the ten years since the fees were established.
- An exclusion under the Intermodal Surface Transportation Efficiency Act (ISTEA) that postponed NPDES permit application deadlines for most storm water discharges associated with industrial activity at facilities that are owned or operated by small municipalities, including construction activity over five acres, is removed. All listed industrial facilities, whether municipally or privately owned, will require permit coverage as per federal regulations.

Changes to Subchapter III – Construction Site Storm Water Discharges
- The lower threshold for permit coverage drops from five acres to one acre of land disturbance. Areas under one acre in size are also subject to regulation on a case-by-case basis if they are deemed a significant source of pollution to waters of the state.
- Municipalities may request and become authorized to provide state construction site permit coverage on behalf of DNR
- The fee structure is proposed to be changed from a flat fee of $200 to a pro-rated $140 to $350. The fee will be based on the amount of land disturbance.

3. How this Proposal Affects Existing Policy

The proposed revisions to ch. NR 216 are consistent with and expand upon existing Department policy on regulation of discharges. Under the current ch. NR 216, DNR has used its regulatory authority to issue WPDES permits for storm water discharges in municipalities with population of 100,000 or more, erosion control on construction sites of five acres or more and industries that discharge storm water to waters of the state.

The revisions will expand permit coverage to municipalities in urbanized areas, defined by the U.S. Census Bureau as an area with a total population of at least 50,000 and a minimum average population density of more than 500 people per square mile, and to certain municipalities located outside of urbanized areas. These urbanized areas are automatically designated for regulation through Phase II. For construction site permit coverage, the proposed revisions lower the threshold from five acres to one acre, expanding both the number of sites and the level of water resource protection. For industrial dischargers the proposed revisions add a degree of flexibility so that facilities that eliminate outdoor exposure of materials and operations that could otherwise contaminate storm water can be exempted from permit coverage.

Chapter NR 216 builds upon the regulatory authority that DNR has been exercising in several program areas to control certain discharges of contaminated storm water for many years. Some examples of activities in which storm water controls are required include licensing of landfills, hazardous waste and metallic mines.

4. Hearing Synopsis

The department conducted five public hearings on the proposed revisions to ch. NR 216 between July 21 and 31, 2003. Eighty people attended the hearings. Five of those in attendance presented oral testimony and another five submitted comments on appearance slips. The attendance and testimony breakdown is shown in the table below.

Public Hearing Attendance and Testimony						
	Eau Claire	**Wausau**	**Madison**	**Milwaukee**	**Green Bay**	**TOTAL**
Total Count	9	6	25	20	20	80
Appearance Slips	9	0	7	6	13	35
Testimony	1	0	1	1	2	5

During the written comment period that ended August 8, 2003, the department received 37 comments from municipalities, construction and development interests, citizen groups and interested individuals. These public comments and comments from EPA, Region 5, along with department responses are attached to this memo. Comments and department responses to Wisconsin Legislative Council Rules Clearinghouse comments are included at the end of this section of the Background Memo. Comments from small businesses along with the department responses are included in the attached Final Regulatory Flexibility Analysis.

There was some discussion with the Municipal Environmental Group following the hearings regarding an adjusted municipal permit fee schedule.

Response to Legislative Council Rules Clearinghouse Report

Form, Style and Placement in Administrative Code

a. The term "discharge" is defined in s. NR 216.002(5). "Discharge" appears at many places in the rules. A good test for the effectiveness of a definition is whether the definition can be substituted for the term where the term appears in the rule. There are a number of places where the rule fails this test. "Discharge" is defined as a discharge of pollutants into waters of the state. However, "illicit discharge" as defined in s. NR 216.002(11), means a discharge to a municipal separate storm sewer system. In some instances, "discharge" is accompanied by some, but not all, words from the definition, as in s. NR 216.002(9), which refers to the "discharge of pollutants." This phrase could be replaced by "discharge." In general, use of the term "discharge" should be reviewed where it occurs in the rules and the use of the term should be harmonized with the definition, or the definition should be changed. See also s. NR 216.002(38), in which it appears that "runoff pollution into waters of the state" could be replaced by "discharge," unless this term is meant to include nonpoint sources as well. See also s. NR 216.004(3), in which "discharge" is followed by "of pollutants to waters of the state," which repeats a phrase in the definition.

Response: The order has been changed as suggested in the comment, and a definition of "discharge of pollutants" has also been added.

b. The terms defined in s. NR 216.002(36) and (36m) should be reversed so that they are in alphabetical order. A similar change should be made with subs. (40) and (41).

Response: The order has been changed.

c. The subsection titles in s. NR 216.003 should be shown in all capital letters. Also, the font for s. NR 216.46(1)(title) seems larger than the font for the other subsections.

Response: These corrections have been made.

d. In a number of provision, "all of the following" or "any of the following" or a similar phrase needs to be inserted before the colon in the introductory material. For example, in s. NR 216.024(3)(intro.), "of the following occur" should be inserted before the colon. In s. NR 216.03(2)(c), (intro.), "all of the following apply" should be inserted and a period should replace "and" at the end of subd. I. Also see s. NR 216.07(1)(a)(intro) and (b)(intro.) and (3)(intro.).

Response: We revised the rule in such instances.

In several provisions, introductory material does not end in a colon and lead into the subunits that follow. For example, s. NR 216.32(intro.) should be s. NR 216.32(1) and the subsequent subunits should be subs. (2) to (5). (Note that they are now inappropriately lettered as paragraphs rather than numbered as subsections.)

The entire rule should be reviewed for instances of these errors and consistency with s. 1.03(8), Manual.

Response: We revised the rule in such instances.

e. Section NR 216.21(2)(b)6. contains a reference to the Resource Conservation and Recovery Act, followed by the acronym for that act. The rule could include a list of acronyms, such as that found in s. NR 205.04.

Response: The RCRA acronym has been deleted.

Adequacy of References to Related Statutes, Rules and Forms

a. Following the introductory paragraph in the definitions section, it would be useful to add a note calling attention to the definitions in ch. NR 205, some of which are applicable to ch. NR 216.

Response: Such a note was added.

b. Section NR 216.003(1) contains a reference to substantive requirements of "federal law." It would be useful to have more information, perhaps in a note, to explain what is the federal law and what is the maximum time period.

Response: The maximum time period of 5 years was added to the note.

c. The note after s. NR 216.03(1) should be expanded to include information about how the forms may be obtained.

Response: This was added to the note.

d. Since ch. NR 216 is being repealed and recreated, references in other rules to specific provision of ch. NR 216 should be reviewed to ensure that they are still accurate. For example, s. NR 162.003(29) refers to s. NR 216.002(1)); it appears that this should be changed to refer to s. NR 216.002(11).

Response: A table has been created that lists existing and revised cross references that need to be revised in other rules.

e. In the certification statement in s. NR 216.21 (2m) (c) 4., "Wis. Adm. Code" is used after one reference to ch. NR 216, but not after the other. The terms should be consistent.

Response: "Wis. Adm. Code" was removed to be consistent across the chapter.

Clarity, Grammer, Punctuation and Use of Plain Language

a. Should s. NR 216.002(7) be modified to indicate the substance that is measured to determine the concentration? Also, is the term "event mean concentration" used in the rule? If not, the definition should be deleted.

Response: It has been deleted.

b. Should "unless it is" be inserted after "census" in s. NR 216.02(4)?

Response: This change has been made.

c. It appears that a word or words are missing after "subchapter" in s. NR 216.022.

Response: The word "requires" was inserted to complete this sentence.

d. Sections NR 216.025 and 216.026 refer to "designate" and "designation." It is not clear from the text of these two sections what is meant by designation; that is, what regulatory effect or purpose is achieved by designation? Also, it is not clear how these sections relate to the rest of the proposed rule.

Response: This has been clarified to indicate that the action (designate/designation) means to require permit coverage under the subchapter.

e. In s. NR 216.22(7)(a), should "coverage" replace "covered"?

Response: Change has been made.

f. The word "find" should be changed to "finds" in s. NR 216.24.

Response: Change has been made.

g. The last phrase in s. NR 216.42(4) should be clarified. It is not clear whether the phrase "shall be in compliance with this subchapter" creates a separate requirement to comply with the subchapter, in addition to the WPDES permit, or whether the discharge is deemed to be in compliance with the subchapter if it is done pursuant to a WPDES permit.

Response: We have clarified this phrase.

h. The word "local" is unnecessary as a modifier of "municipality" in s. NR 216.47(5).

Response: The word "local" has been removed.

i. Is the notice to the department under s. NR 216.50(2) required to be submitted five working days prior to or five working days after an intent to change the plans?

Response: This has been clarified to indicate 5 days prior to a change in plans.

5. Environmental Assessment

DNR's Bureau of Integrated Science Services has made a determination that the proposed revision of ch. NR 216 is a Type III action as defined in s. NR 150.03(3) and, therefore, does not require an environmental analysis. Type III actions normally do not have the potential to cause significant environmental effects, normally do not significantly affect energy usage and normally do not involve unresolved conflicts in the use of available resources.

6. Final Regulatory FlexibilityAnalysis

The impacts of the proposed revisions to ch. NR 216 are discussed in the attached final regulatory flexibility analysis.